June 19, 1934. F. N. BEEDE 1,963,822

GARMENT PRESSING MACHINE

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Fig. 1.

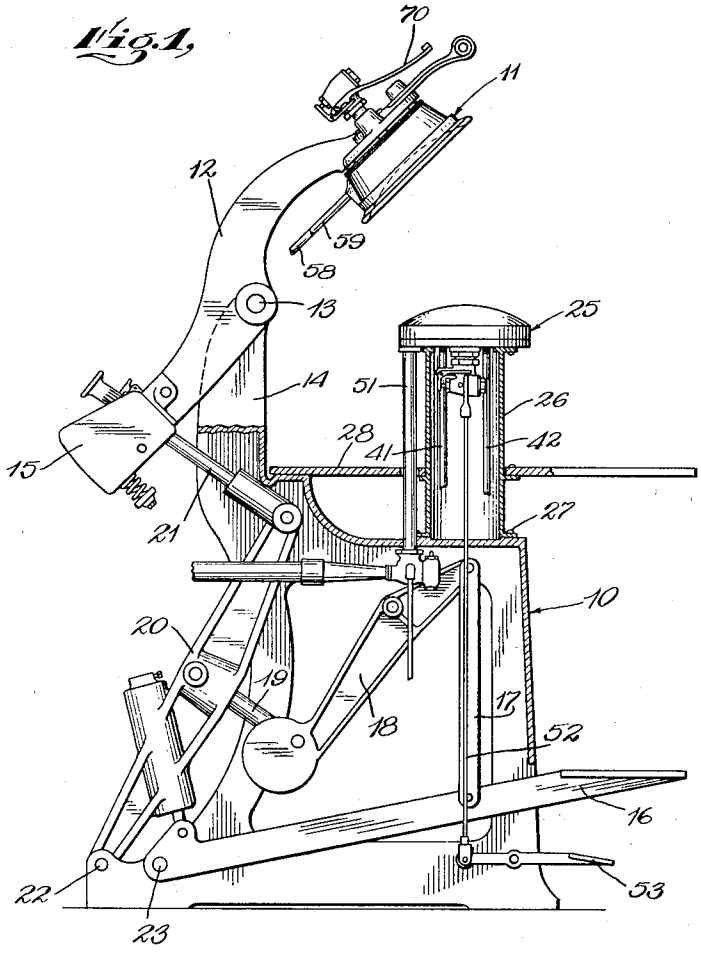


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Fig. 2.

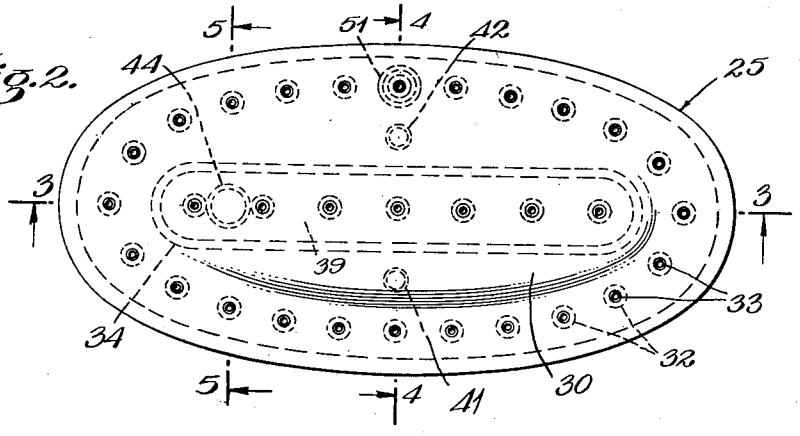



Fig. 3.

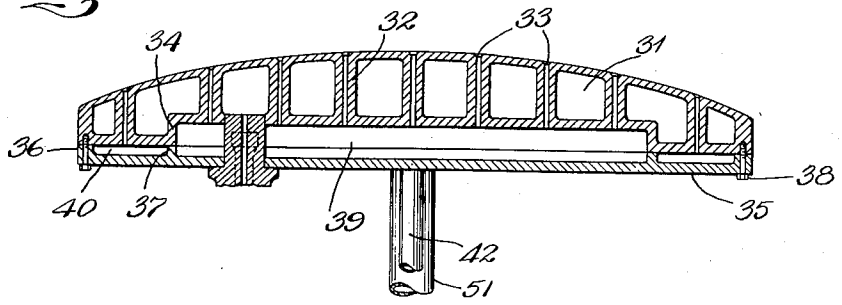



Fig. 5.

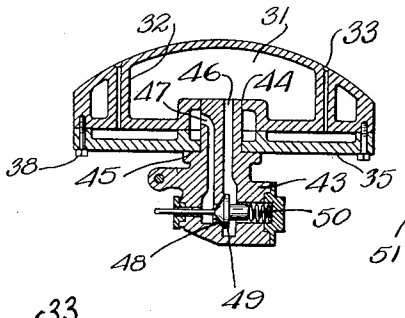
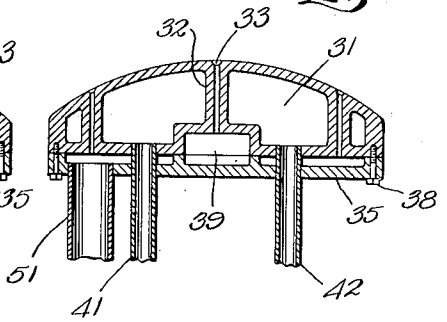



Fig. 4.



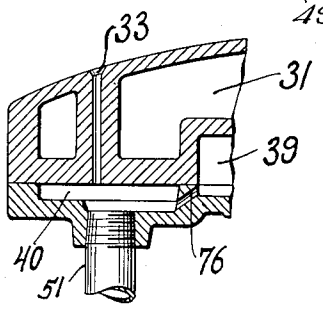




Fig. 6.

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Fig. 7.

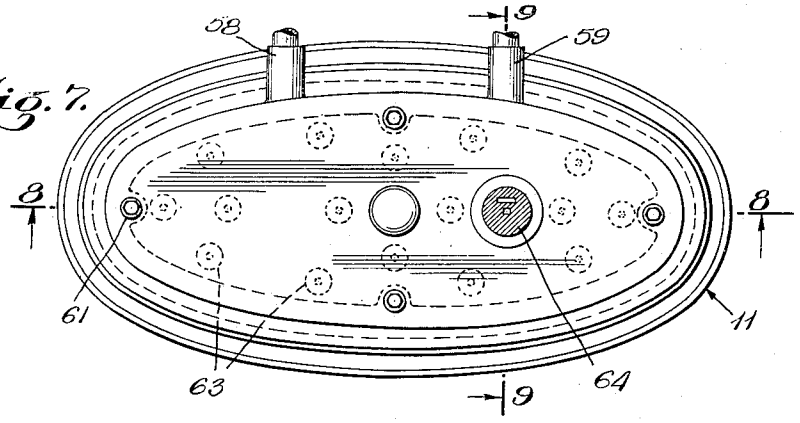



Fig. 8.

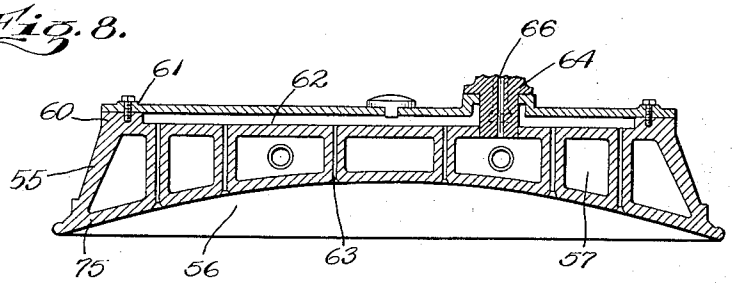
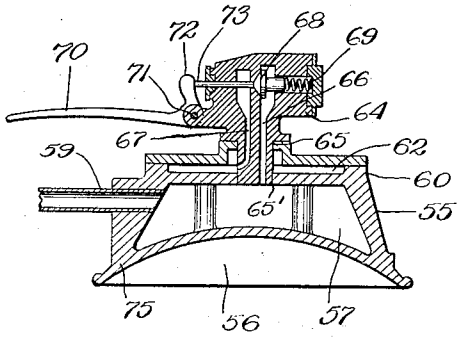



Fig. 9.

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Patented June 19, 1934 1,963,822

# UNITED STATES PATENT OFFICE

1,963,822

## GARMENT PRESSING MACHINE

Frederic Newman Beede, Pawtucket, R. I.

Application February 20, 1931, Serial No. 517,295

6 Claims. (Cl. 68—9)

My invention relates to garment pressing machines.

The present invention is concerned principally with the pressing members between which the garments to be pressed are laid, and the principal objects of the invention include a special construction and arrangement of the pressing members, namely, the head or upper movable member and a buck or lower stationary member to afford a hotter pressing surface than that afforded by the usual construction of these members wherein a foraminous plate is provided in conjunction with a steam receiving chamber remote from the pressing surface or foraminous plate; to provide pressing members in which the area of steam distribution is more or less restricted and located preferably to the central portion of the pressing members; to apply hotter and dryer steam to the garments than is possible under the usual construction; and to provide a unitary structure capable of applying steam to the garments over a restricted area and for withdrawing by vacuum the steam and moisture from the garments over a relatively large area.

The above and other objects and advantages of the invention will become apparent and be specifically referred to during the course of the detailed description of the accompanying drawings wherein representative embodiments of my invention are illustrated and in which:

Fig. 1 is a side elevation partly in section of a garment pressing machine embodying the invention;

Fig. 2 is a top plan view of the buck or lower pressing member;

Fig. 3 is a sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a sectional view on the line 4—4 of Fig. 2;

Fig. 5 is a sectional view on the line 5—5 of Fig. 2;

Fig. 6 is a fragmentary sectional view similar to Fig. 4 showing a slight modification;

Fig. 7 is a plan view of the head or upper pressing member;

Fig. 8 is a sectional view on the line 8—8 of Fig. 7; and

Fig. 9 is a sectional view on the line 9—9 of Fig. 7.

Referring to Fig. 1 of the drawings, the numeral 10 designates the frame which rests upon a floor or other foundation and supports the parts of the pressing machine in operative position. The upper pressing element or head 11, which will be later described in detail, is mounted for vertical movement on the rock arm 12 which is fulcrumed or pivoted at 13 to an upward extension or bracket 14 on the frame 10. A counterweight 15 is mounted on the other end of the rock arm 12, and the arm is operated to control movement of the head 11 by an arrangement of toggle levers and links comprising a pedal lever 16 connected by a link 17 to a bell crank lever 18 which is connected by a link 19 to a main toggle lever 20, which is connected to the rock arm 12 by the toggle member 21. The main toggle lever 20 is pivotally connected to the frame 10 at 22, and the pedal lever 16 is pivotally connected to the frame at 23, just in front of pivot 22. A detailed description of the connections between the parts and the relation and operation of same will be found in Patent 1,661,153 of March 6, 1928.

A buck or lower pressing member 25 is fixedly supported on a vertical support 26 secured to the frame 10 as by bolts 27, and a table 28 is mounted on the frame 10 and extends back of the buck and outwardly from the front of the buck in the usual manner.

The buck 25 may be constructed and arranged for the accomplishment of objects of the invention in the following manner. An upper casting 30 preferably of oval shape has its top surface curved downwardly toward its edges to provide a convex face on which a pad of suitable material can be positioned for receiving the garments to be pressed. The casting 30 has a continuous internal chamber 31 with pillars 32 extending from the top to the bottom, and relatively small openings 33 are provided at spaced intervals through the pillars and top and bottom of the casting. The pillars having openings 33 therethrough constitute ducts for purposes hereinafter explained, and it should be apparent that the size, shape, and relative position of the pillars may be varied at will, so that I do not use the term "pillars" necessarily in the sense of a support or column of any particular shape or construction. The bottom of the casting is offset at shoulders 34 to provide a relatively narrow and elongated centrally disposed depression between the shoulders. A lower casting 35 of the same dimensions and cross sectional shape and area as the casting 30, is provided with annular upstanding flanges 36 around its edges, and similar flanges or ribs 37 spaced from the flanges 36 and located to be in alinement with the shoulders 34 when the two castings are placed together as shown in Fig. 3. The castings are held together by bolts 38, and when assembled provide

an elongated central chamber 39 formed by shoulders 34, flanges 37 and inner surfaces of the castings therebetween, and an annular chamber 40 formed by flanges 36 and 37 and surfaces therebetween. It will be noted that a number of openings 33 communicate with each chamber, and that there are more in communication with chamber 40 than with 39.

The chamber 31, immediately adjacent the pressing surface, is a heating chamber and is connected with a source of steam supply by pipes 41 and 42. Communication is established between the heating chamber 31 and the steam spraying or distributing chamber 39 through the valve 43 which is mounted in any known or suitable manner such as by screw threading, welding, or the like through openings 44 and 45 in the castings 30 and 35, with passage 46 opening into the heating chamber 31 and passage 47 opening into spraying or steam distributing chamber 39. A bevelled seat 48 is provided between the passages 46 and 47 and a check valve 49 is normally biased by spring 50 to closed position against the bevelled seat 49. An operating rod 52 connects the valve 49 to pedal lever 53 so that the valve can be moved against the force of the spring 50 to establish communication through passages 46 and 47 between chambers 31 and 39, at which time steam will be sprayed up through openings 33 within the area of the chamber 39. It will be noted that the steam must pass between the heated walls of the openings 33 formed through the heating chamber 31 so that the steam will be subjected to heat and partly dried before being sprayed into the garment. A pipe 51 is mounted through the bottom of the casting 35 and is connected to suitable exhausting apparatus not shown and communicates with chamber 40 so that a vacuum created by the exhausting apparatus will be effective through the openings 33 distributed over the relatively large area of the buck and in communication with chamber 40 to draw the steam from the garment.

The arrangement shown minimizes condensation due to the proximity of the heating chamber and the location of the spraying chamber, and drainage of any condensed moisture can be had through the pipe 51. I may provide an opening between the suction and spray chambers similar to the opening 76 shown in Fig. 6 through the rib 37 to enable use of all openings 33 as suction openings and will not interfere with proper spraying of steam, and will also provide drainage from chamber 39 in common with that from chamber 40.

Referring to Figs. 6–8 the pressing head 11 or upper pressing member will be described in detail. In the embodiment shown it comprises a casting 55 having a concave face 56 corresponding to the convex face of the buck. A continuous steam chamber 57 is connected by pipes 58 and 59 to the aforementioned source of steam. The casting 55 has an annular flange 60 upstanding around its top to provide a central recess and to receive the plate 61 which covers the recess to provide a chamber 62. A plurality of ducts 63 are formed through the casting similar to the ducts 33 in the buck, and are in communication with the chamber 62 and open at the face 56. A valve 64 is mounted through openings 65 and 65′ in the plate 61 and casting 55 by screw threading, welding, or other known means. The valve has passages 66 and 67 communicating with each other and with the chambers 57 and 62, and a check valve 68 is normally biased by spring 69 to close the opening between the passages 66 and 67. A lever 70 is pivoted to the valve casing at 71 and has an end disposed in front of valve rod 73 so that when the lever is swung on its pivot the end 72 will depress the valve against the action of the spring 69 to establish communication between chambers 57 and 62 through passages 66 and 67 to effect spraying of steam through ducts 63, the same as in the case of the buck. I provide the head 11 with a flaring marginal portion 75 outside of the area of the spraying chamber 62 and ducts 63 to confine the steam to the garment and to prevent the usual free escapement thereof from the edges of the pressing members.

The operation and advantages of my invention should be apparent from the foregoing but I will make brief reference thereto. When a garment is to be pressed it is positioned on the buck 25, it being understood that steam is being constantly supplied to the chamber 31 therein through the pipes 41 and 42, and similarly to the chamber 57 in the head through pipes 58 and 59. The operating mechanism for swinging the head downwardly against the garment is operated by the attendant through the lever 16 as explained, and when the head is brought down against the garment, the levers 70 and 53 are operated to open the passages in the valves 64 and 43 in the manner previously explained so that steam will flow from the chambers 31 and 57 to the chambers 39 and 62 and from these chambers through the ducts 33 and 63 into the garment. When the garment has been sufficiently steamed the levers 53 and 70 are released to shut off the flow of steam through the ducts 33 and 63 and the exhausting mechanism is operated to create the vacuum through the ducts 33, chamber 40 and pipe 51.

It should be obvious from the foregoing that the pressing surfaces or cooperating faces of the head and buck are always maintained at at an even and relatively high temperature and are not subjected to cooling since there is a constant supply of steam to the chambers 31 and 57. The pillars or ducts 32 being a part of or within the chambers 31 and 57 are also maintained at a constant and relatively high temperature so that the steam flowing from the chambers through the spray chambers and ducts will come out on to the garment comparatively dry and quite hot, as well as establishing communication between the spray and suction chambers so that all ducts may serve as suction ducts.

It should also be apparent that the steam spraying chamber in the buck is insulated from the atmospheric or room temperatures by the heating chamber, the suction chamber, and the support for the buck so that any condensation is materially reduced.

In Fig. 6 I have shown a modification of the lower casting of the buck wherein the bottom of the suction chamber 40 is below the bottom of the spray chamber 39 and port or passage 76 is formed through the flange separating these chambers and communicates from the bottom of the spray chamber with the bottom of the suction chamber to permit drainage of moisture which may form in the spray chamber.

I claim:—

1. A pressing member for garment pressing machines comprising a steam receiving chamber formed with a pressing face, a steam spraying

chamber remote from the pressing face, means for establishing communication between said chambers, a plurality of ducts through said steam receiving chamber communicating with said spraying chamber and opening at the pressing face, a suction chamber, and a plurality of ducts through said steam receiving chamber communicating with said suction chamber and opening at the pressing face.

2. The structure of claim 1 wherein the spray ducts are centrally disposed on the pressing face and the suction ducts are marginally disposed.

3. The structure of claim 1 wherein the suction and spraying chambers communicate whereby all of said ducts serve as suction ducts after the spraying.

4. A pressing member for garment pressing machines comprising a steam receiving chamber having a pressing face and a bottom plate, a plurality of ducts extending through said chamber, a plate secured to said chamber on its side opposite to the pressing face, and a plurality of members between said plate and bottom plate of the chamber forming therewith steam spraying and suction chambers remote from the pressing face and each in communication with certain of said ducts.

5. A pressing member for garment pressing machines comprising a steam receiving chamber formed with a pressing face and having a plurality of ducts extending therethrough, and opening on the pressing face, there being no openings on said pressing face communicating with the interior of the chamber, a plate secured to the other face of the chamber, spaced members between said plate and chamber providing a steam spraying chamber and a suction chamber, a valve mounted through said plate and steam receiving chamber and having openings communicating respectively with said steam receiving and steam spraying chambers, said valve being operable to establish communication between said steam receiving and steam spraying chambers, some of said ducts opening into the suction chamber and some opening into the steam spraying chamber.

6. The structure of claim 5 wherein at least one opening is provided through the member separating the suction and spraying chambers whereby all of said ducts may serve as suction ducts.

FREDERIC NEWMAN BEEDE.